



SANDING LUBRICANT/WET SANDING

The process referred to as wet sanding has been used for years with metal, plastic, stone, masonry, and many other materials. Application of sanding lubricants to woodworking is not a new method but has not received wide application. We forget that sandpaper is a cutting tool; sharp pieces of glass cutting the surface of the wood. When using sanding lubricants, the sawdust is trapped in the lubricant and becomes a polishing compound. We begin to polish the wood as we are cutting it, thus improving the surface. Sanding with a lubricant will produce a higher quality surface in less time, in part because the polishing compound is augmenting the cutting action but also because we can sand at a higher speed. The presence of lubricant reduces heating of the surface of the wood (or plastic) thus preventing heat checking. Heat checking is most commonly, but not exclusively, observed in dense, oily woods (cocobolo, ebony, rosewood, redheart, black walnut, black locust, persimmon, and many others). Being able to sand on the lathe at higher speeds allows us to complete sanding at a given grit in a shorter time. In addition, use of a sanding lubricant will keep sawdust out of the air, and more importantly out of your lungs.

The choice of the sanding lubricant has some limitations. Paste wax has been used for many years as a sanding lubricant for wood. This has the disadvantage of cost and the fact that it leaves a wax coat on the surface of the wood. Oil has been the most common sanding lubricant. Walnut oil is the most successful sanding lubricant, but linseed oil is also a good choice (keeping in mind that the linseed oil will cause the wood to darken significantly over time). Other vegetable oils, such as canola oil and olive oil, have been used. The downside of these two oils is that they will become rancid in the wood; they are not drying oils and will not solidify in the wood. Paraffin oil (mineral oil) has also been used as a lubricant. Mineral oil will not harden (is not a drying oil) and will seep out of the wood over time, leaving an oily surface that is difficult to finish.

Any project can be sanded using a lubricant. This includes large projects like bowls and platters. Standing on the lathe by hand as well as power sanding with a drill can employ a sanding lubricant. Sanding a bowl, for example, is as simple as applying a thin layer of oil to the surface of the bowl and sanding as usual. Care must be taken to apply additional oil to keep the sanding slurry from becoming too thick, as you would when sanding the smaller project. A sanding lubricant can also be used when doing flat work. Simply apply the oil to the surface ahead of your mechanical sander or sanding block and proceed just as you would with a project on the lathe.

The mechanics of using the sanding lubricant are very straightforward. For a small project; a pen, bottle stopper, peppermill, pizza cutter handle, etc., a small amount of oil (preferably walnut oil) can be added directly to the sandpaper. The process works most efficiently beginning at about 200 grit sandpaper. Apply the paper to the wood and sand as usual, adding additional oil to keep the oil/sawdust slurry in a free-flowing state. There is no need to slow the lathe down, the oil will prevent the checking. Check the surface frequently with your finger to judge the results. To move on to the next grit, simply add fresh oil to the new sandpaper and sand as before. The temptation will be to skip grits of sandpaper. Don't do this! Since the sanding time required to achieve a satisfactory surface is significantly shorter, the benefit of including all grits of sandpaper will become obvious in the final surface. How far do you need to sand? As far as you want. If you are sanding a plastic surface, sanding should proceed to at least 5000 grit. When sanding is completed, wash the surface with fresh oil and a clean paper towel. Friction polish the surface to set the walnut oil that has been forced into the wood by the sanding lubricant procedure. This produces a smoother surface upon which to apply your film finish, if desired.

The most important point to be taken away is that no finish is any better than the surface on which it is applied. When it comes to finishing, surface is everything.